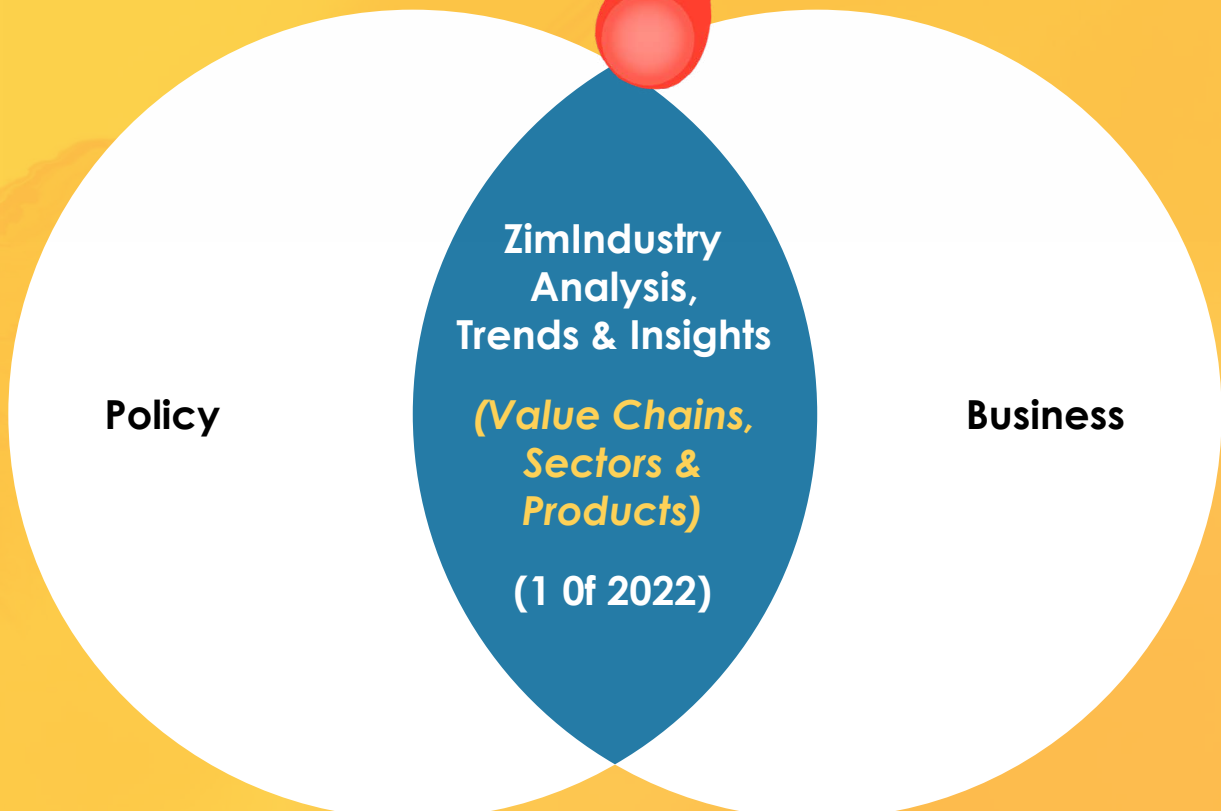




CZI
CONFEDERATION OF
ZIMBABWE INDUSTRIES
Enterprise Leadership Service

Safety Matches Manufacturing



July 2022



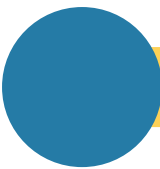
Who Are We

Enterprise Leadership Service

The Confederation of Zimbabwe Industries (CZI) is Zimbabwe's largest business membership organization with members from the Manufacturing as well as Trade, Transport, IT, Education and Professional Services, making up 36 sub-sectors of the Zimbabwean economy.

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About This Publication

The CZI ZimIndustry Analysis, Trends and Insights focusing on Value Chains Sectors and Products is a publication of CZI. These are publications aimed at informing the market and policy makers on **industrial development, technology, emergence of new sectors or products, performance in value chains, emerging trends** and highlight both **business and policy opportunities**.



Acknowledgments

The CZI ZimIndustry Analysis, Trends and Insights – Safety Matches Manufacturing is a research and analysis done by CZI Industrial and Economic Research and is a product of the CZI.



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The information in this briefing may freely be used with acknowledgment and should be quoted as: **The CZI ZimIndustry Analysis, Trends and Insights – Safety Matches Manufacturing**

We have a team of competent specialists who drive the research and advisory work that we do. We have the advantage of being at the intersection of business and policy giving us unparalleled grasp of the business and policy ecosystem in Zimbabwe including the value chains and sectors.

CZI Industrial and Economic Research offers a wide range of products and services to help our members not only to navigate but also to shape the business environment in which they operate.

Business Regulatory Environment Accompaniment

We help members make the business and economic case for presentation to policy makers on issues affecting their business

Commissioned Business Surveys: We have a track record of conducting surveys and with a competent team, we can conduct commissioned surveys on behalf of business utilising our broad-based reach of Zimbabwean companies which gives us a comprehensive view of the market. We conduct research on economic and industry performance and trends providing analysis and insights that inform business decision making

Economic Analysis: Our economic analysis is the most widely quoted in the Zimbabwe and is quoted by business, government, international institutions, academia and the media. We are a strong knowledge and research focussed organisation and generating insights and cutting-edge analysis that is relevant for business and policy decision making is one of our key areas of competency. Our analysis generates evidence for policy decision making and empowers the business leaders to interact with the policy environment and developments therein.

Corporate Economic Briefings: Our experts/analysts can deliver briefings to boards and senior management teams in support of ongoing business reviews or strategy sessions. We constantly host regional heads of multi-nationals that are operating in the country to present and discuss into the economic outlook for the economy as a whole and also implications for the sectors they operate in.

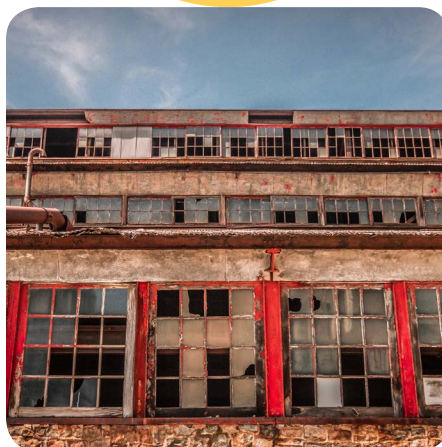
Private Sector Development and Business Environment Projects Implementation: We have expertise to implement policy projects at macro, sectoral and value chain levels.



Once
Upon A
Time

Current

Possible
Futures



Most of the Zimbabwean rural areas have no access to electricity. According to the World Bank statistics, about 70% of the Zimbabwean population mainly live in rural areas thus they use safety matches for lighting firewood, lighting candles and heating purposes.

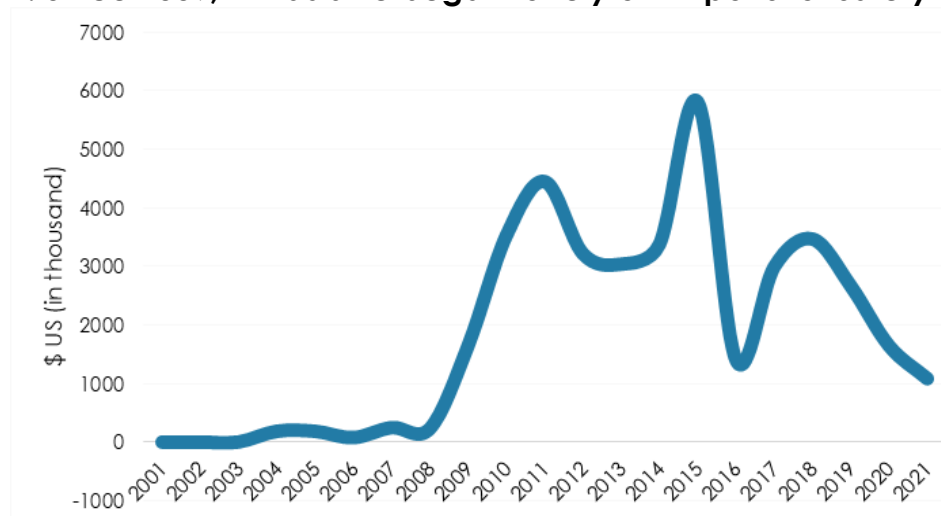
Safety matches is also used in starting a fireplace, industrial burners, camp fire and tobacco barns. The population that uses safety matches in urban Zimbabwe has also increased over the years due to load shedding, as the use of liquified petroleum gas as a substitute gathered pace. This makes the safety match value chain one of the most important value chains in the economy.

Zimbabwe used to have a thriving matches business. Lion Matches was a well-known brand across the whole country, and was generally large enough to absorb

domestic demand. However, the business was severely affected by the hyperinflation era, and it closed operations in 2009. The company failed to resume operation even under dollarisation, as import competition became intense. We are therefore looking at a loss of manufacturing capacity and self-sufficiency in the matches production.

Since the closure of Lion Matches in 2009, safety matches imports started to increase drastically (Figure 1). Over the past three years, Zimbabwe used about \$5,4 million on importing finished safety matches. Relying on imports at a time when demand for the product is assured is against the general thrust of the National Development Strategy 1 (NDS1), which seeks to provide measures for 'Moving the Economy up the Value Chain and Structural Transformation' as a pillar towards attaining Vision 2030 (Prosperous & Empowered Upper Middle-Income Zimbabwe by 2030).

Figure 1: Since 2009, Zimbabwe began to rely on imports for safety matches



Source: Author's compilation from Trade Map data

The structural and industrial transformation envisaged under NDS1 seeks to ensure that the secondary industries, which include manufacturing, gain more prominence in the economy, given the cascading value chain benefits that will drive employment and livelihoods gains. High import dependence threatens rapid economic transformation and resuscitation of the manufacturing sector. In addition, COVID-19 revealed the need to minimise import dependence and become self-sufficient, as countries responded by closing their frontiers. Economies that are more reliant on imports rather than having a strong and vibrant manufacturing sector suffered the most. Economies that are associated with viable and strong value chains generally face reduced impact of shocks, especially those that affect global value and supply chains. Resuscitation of

the safety matches industry will support import substitution initiative, job creation, utilizing idle capacity in the manufacturing sector, increase in tax revenue, foreign currency earnings when safety matches are exported as well as reduction of demand for foreign currency.

Thus, it is important to take stock of all the products which the country used to have comparative advantage in producing in the past with a view to establishing whether there is any scope for resuscitating such advantages. The safety match is a primary candidate for analysis. Understanding the challenges and constraints that are associated with the localisation of the value chain is important in giving critical leads as to what needs to be done to restore local production of safety matches.

2

Paper objectives

The main objective of this paper is to give an understanding of the structure of the safety matches value chain. The specific objectives are:

- To identify raw materials that are needed for the matches production
- To analyse the cost drivers
- To assess scope for localizing raw materials.

Main raw materials in the safety matches value chains

There are a number of raw materials that are used in the safety matches production. These include the following:

- Match splints
- Skillets
- Blue-board
- Paraffin wax
- Empty carton
- Potassium chlorate
- Wrappers
- Brown dye
- Plastic shrink wrap
- Glue
- Oxide
- Zinc oxide
- Potassium dichromate, and
- PVA adhesive

Given that there is no pronounced local production of safety matches, most of these raw materials have to be imported as there is no local market for local producers to emerge. Currently, only empty cartons and wrappers are readily available in Zimbabwe. However, some

of these are made from locally available raw materials which can be a pointer to the ease at which localisation of some of these products is possible.

The three major raw materials in terms of cost drivers are match splints, skillets and blue-board (see section 4). Match splints are wooden sticks which form the bulk of the safety match stick in terms of size (Figure 5). Skillets are the printed box with side friction chemical. The sides of match box have coating of antimony sulphide and red phosphorus. Flames are generated when there is friction between the skillets and the patch stick head. The safety match has a head that ignites when struck on skillets with the substance commonly used for obtaining combustion at the temperature of frictional heat being a compound of phosphorus¹. On the other hand, blue-board is a special paper for safety matches box which is made from soft wood or kraft paper. On blue-board, the imports started to increase after the closure of the Lion Safety Matches Company (Figure 3). This is because Mutare Board and Paper Mill ceased the kraft paper production when local demand stopped.

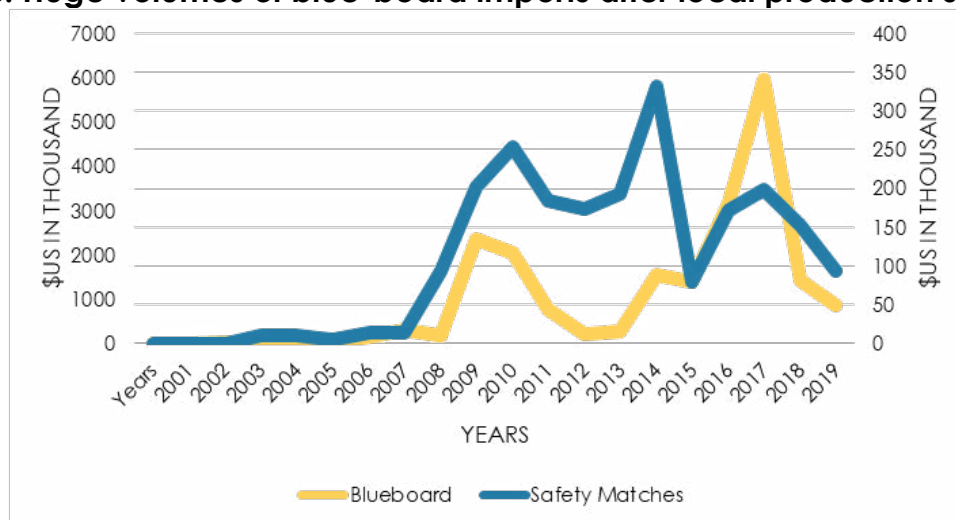
Figure 2: Images of the three main raw materials in the production of safety matches



¹ <https://www.britannica.com/science/match-tinder>



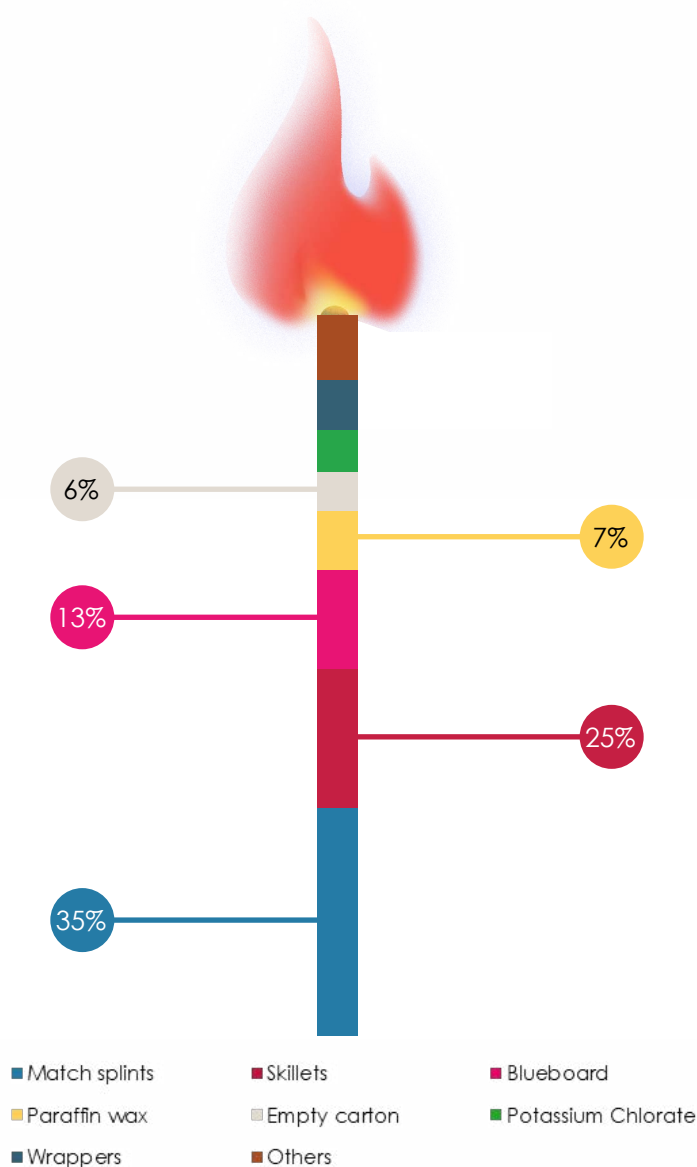
Figure 3: Huge volumes of blue-board imports after local production stoppage



Source: Author's compilation from Trade Map data.

Although there are many raw materials that are used to manufacture safety matches, about 70% of the total production is accounted for by only three raw materials; match splints, skilllets and blue-board (Figure 2). This generally means that the ability to localise these three main raw materials would be a key determinant of the ability to produce safety matches locally rather than relying on imports. These costs are

inclusive of customs duty, as match splints, skilllets and blue-board attract 25%, 25% +\$1.00 per kg and 10% respectively. This means that if Zimbabwe localize these three raw materials, the country will increase production of safety matches, while also creating jobs, saving foreign currency and as well resuscitating idle capacity in the manufacturing sector.





5

Scope for localizing raw materials

While it might be difficult to wholly localise the production of the raw materials, it is possible to at least limit the import content in the three main raw materials. Zimbabwe currently imports match splints, despite these being purely timber products. Thus local production of match splints can see the localisation of 35% of the total costs. The blue board can be manufactured from kraft paper. There is a possibility of leveraging on new technologies to produce kraft paper using the cotton stalk in Zimbabwe. The cotton plant stalk chips of about 1.5 cm-2.0 cm size can be digested in a rotary digester with kraft liquor at high temperature, which is then converted into pulp that can be made into kraft paper using a paper

making machine (Chigumira, 2017). The opportunity is currently not being utilized in Zimbabwe. Cotton stalks kept in the fields after harvest are a breeding ground for pink bollworm (*pectinophoragossypiella*), boll weevil and other pests. As a result, farmers are ordered that the cotton stalks must be destroyed to prevent the build-up of these pests, in line with the Pests and Diseases Act [Chapter 19:08].

Zimbabwe has also been proven to have antimony mineral deposits in Kwekwe, Bubi, Mberengwa, Kadoma and Shurugwi². This could give some basis for the manufacture of antimony sulphide, which is a critical element for skillets.

2 Zimbabwe has Antimony Mineral Deposits in these areas of verified deposits: Kwekwe, Bubi, Mberengwa, Kadoma and Shurugwi ([linkedin.com](https://www.linkedin.com))

Currently, the raw materials in the production of safety matches are not being imported in large quantities due to limited local matches production. In addition, the duty structure is currency prohibitive. While the scope for totally localising the raw materials might require new technologies, government can also reduce duty on the raw materials relative to the duty of the final product. Currently, the finished safety matches attract a duty of \$0.02/kg, while duty for the raw materials is currently

prohibitive (Table 1). This means that duty constitutes about 16% of the total product cost and eliminating this will help unlock competitiveness for the local industry. Increasing duty for the finished product and totally eliminating duty for the raw materials would be a critical opportunity of attracting investment in the safety matches business in Zimbabwe. Once local producers emerge, it would be easier for local producers of match splints to emerge as well as there would be demand for such products.

Table 1: Duty of raw materials constitute 16% of total costs while the duty of finished products is only 1% of total costs

Raw material	Duty Rate (%)	Landed Cost CIF Excluding Duty	Duty thereon	Total Landing cost
Field spar	5 %	0.20	0.01	
Paraffin	5%	1.13	0.06	
Brown Dye	5%	0.35	0.02	
Zinc Oxide	5%	0.04	0.00	
Titanium Oxide	5%	0.11	0.01	
Potassium Chlorate	5%	0.60	0.03	
Potassium Dichromate	5%	0.04	0.00	
Glues (Scrap Gelatin)	5%	0.15	0.01	
PVA Adhesive	15%	0.03	0.00	
Plastic Shrink Wrap	15%	0.30	-	
Blueboard	10%	1.98	0.2	
Skillets	40% +US\$1.00/kg	2.65	1.00	
Wrappers	40%	0.45	0.18	
Match Splints	25%	4.60	1.15	
Empty Carton	40% +US\$1.00/kg	1	-	
Total		13.63	2.67	16.30
DIRECT IMPORT OF FINISHED SAFETY MATCHES				
Safety matches	\$0.02/kg	15.33	0.16	15.49

The findings generally point at the difficulties for the emergence of the safety match production industry in Zimbabwe. There is currently no incentive for local production, given that even raw materials are also mainly imported. There is scope, however, to use import duty as a mechanism to make local production attractive relative to importing finished products. In order to resuscitate this value chain, promote local production and economic growth, the following recommendations are suggested:

- Creation of policy incentives for local production, including investment and tax incentives for the re-emergence of the safety matches value chain;
- Removal of duty on all the main raw materials that are used in the production of safety matches. This would give local producers some competitive edge over import competition. However, once the industry has emerged, duty on those raw materials that can be localized, such as match splints, would need to be increased so that local production of the raw materials is promoted.
- High duty on the finished safety match product. Only a relatively high duty for the finished product is more likely to act as a deterrent for the continued reliance on imports at the expense of local production.

Chigumira, G. (2017). *Cotton and its By-products in Zimbabwe: Analysis of Cotton By-products survey*. Geneva: United Nations Conference on Trade and Development.